

REMARKS

This application has been amended so as to place it in condition for allowance at the time of the next Official Action.

Applicants wish to thank Examiner Jimenez for granting the personal interview conducted July 7, 2004, as well as his active and very helpful participation therein.

The Official Action rejects claim 6 under 35 USC §112, second paragraph, as being indefinite. Applicants have amended this claim as necessary in order to eliminate the bases for this rejection, the reconsideration and withdrawal of which are therefore respectfully requested.

The Official Action rejects claims 12, 13, 15, 17-19, 21, and 23 under 35 USC §102(b) as being anticipated by ASAUMI et al. 4,533,581. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

The applied ASAUMI et al. reference discloses a disc roll designed to be used for transporting glass sheets. One of the requirements of the ASAUMI et al. device is its ability to withstand extremely high temperatures. The heat resistant disc roll of the ASAUMI et al. reference is built up from laminated discs. Each of such discs is made from a composition comprising mica particles, a binder, an inorganic filler, and a reinforcing fiber.

The ASAUMI et al. reference describes the use of mica as a requirement to produce the intended disc roll. The reference describes the use of mica in the Summary of the Invention, in the paragraph beginning on line 10 of column 2. The reference also describes the use of mica and its unique and attractive characteristics for the intended disc roll of ASAUMI et al. in the first paragraph of the Detailed Description of the Preferred Embodiments, beginning on line 17 of column 2. In column 4, beginning in the first line thereof, the reference describes the two identified favorable characteristics of the ASAUMI et al. disc roll. Each is defined in terms of the presence of mica in the final product. Finally, the invention recited in the sole claim of the reference also requires the presence of mica.

Of the rejected claims, claims 12 and 18 are independent. Applicants have amended each of claims 12 and 18 to recite the non-hydraulic powder in the form of a Markush group, which group does not include mica. Prior to this amendment, each of claims 12 and 18 recited non-hydraulic powder without a corresponding Markush group, and it was the mica of ASAUMI et al. that was construed as meeting this feature. As the non-hydraulic powder as it is now recited in claims 12 and 18 cannot read on the mica, or any other disclosed material, of ASAUMI et al., applicants suggest that the ASAUMI et al. patent fails to

disclose the full set of features now recited either explicitly or implicitly in each of the rejected claims, and reconsideration and withdrawal of this rejection are therefore respectfully requested.

The Official Action rejects claims 1, 3, 5, 6, and 24-30 under 35 USC §103(a) as being unpatentable over the previously considered ASAUMI et al. reference in view of RIRSCH et al. 4,880,467. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

Of the rejected claims, applicants have canceled claims 24-30.

Of the remaining rejected claims, claims 1 and 3 are independent. In a manner similar to that discussed above in connection with the anticipation rejection and corresponding amendment of independent claims, claims 1 and 3 now recite the non-hydraulic powder in the form of a Markush group, which group does not include mica.

As with the anticipation rejection considered above, the primary ASAUMI et al. reference is applied in the present obviousness rejection for its teaching or suggestion of all features of the rejected claims but for the polymer lattice element. As such, the primary ASAUMI et al. reference fails to teach or suggest the full set of features for which it is offered in light of the present amendment. Moreover, the secondary

RIRSCH et al. reference fails to make up for the shortcomings of ASAUMI et al. with respect to the current form of the claims.

As the two applied references, considered either independently or collectively, fail to teach or suggest the full set of features of the claims in their current form, reconsideration and withdrawal of this rejection are respectfully requested.

The Official Action rejects claims 2 and 4 under 35 USC §103(a) as being unpatentable over a combination of references including ASAUMI et al. and RIRSCH et al., as considered above. The rejection of claim 2 adds BAUER et al. 4,718,154, and the rejection of claim 4 adds FUCHS et al. 5,257,965. The BAUER et al. reference is offered for its asserted teaching or suggestion of providing two rotary shaft portions axially inwardly inserted from opposite sides of the cylindrical roller portion. The FUCHS et al. reference is offered for its asserted teaching or suggestion of a core rod 6 extending over two cylindrical molded bodies.

However, irrespective of the ability of the BAUER et al. and FUCHS et al. references to teach or suggest that for which they are respectively offered, the overall combination of references in each rejection fails to teach or suggest the full set of features recited in the rejected claims, at least by virtue of their dependence from amended independent claims 1 and

3, respectively, and in consideration of the analysis provided above in connection with such independent claims. Reconsideration and withdrawal of these rejections are therefore respectfully requested.

The Official Action rejects claims 8-11, 16, and 22 under 35 USC §103(a) as being unpatentable over ASAUMI et al. in view of FUCHS et al. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

Of the rejected claims, claims 8 and 10 are independent method claims, from which each of the balance of the rejected claims ultimately depends. As with the apparatus claims discussed in the previous rejections, independent claims 8 and 10 now recite the non-hydraulic powder in the form of a Markush group, which group does not include mica.

As discussed above in connection with the previous rejections, the ASAUMI et al. reference, by virtue of its disclosure of, and reliance upon, mica as a necessary element of the composition, fails to teach or suggest that for which it is offered in light of the current form of the rejected claims.

The secondary FUCHS et al. reference is offered only for its asserted teaching or suggestion of making preformed holes in cylindrical bodies and then inserting a shaft therethrough. However, such secondary reference fails to overcome the shortcomings of the primary ASAUMI et al. reference with respect

to the specific composition of the roller as now recited in each of the independent claims. Reconsideration and withdrawal of this rejection are therefore respectfully requested.

The Official Action rejects claims 14 and 20 under 35 USC §103(a) as being unpatentable over ASAUMI et al. in view of STRANDEL 3,577,619. The secondary STRANDEL reference is offered only for its asserted teaching or suggestion that it is known to provide one end portion of a rotary shaft portion with a screw portion to securely fasten a rotary shaft to a cylindrical roller portion. However, rejected claim 14 depends from amended independent claim 12, and rejected claim 20 depends from amended independent claim 18. As such, each of the rejected claims implicitly recites the composition now specifically defined as to the non-hydraulic powder in terms of a Markush group. As the ASAUMI et al. reference fails to teach or suggest at least such feature of the composition, the overall combination of references necessarily fails to render the claims obvious in their current form.

The amendments provided above reflect the exact substance of those amendments discussed during the personal interview of July 7, 2004. The Interview Summary corresponding to such personal interview states that the proposed amendments that were discussed overcome the prior art rejections applied in the last Official Action.

In addition to the amendments described above, applicants have added new claims 31-35. Of these, claim 31 is an independent claim from which each of claims 32-34 ultimately depends. Independent claim 31 is a method claim reciting steps for producing a paper feed roller. The overall form of the claim is comparable to current claim 8.

However, whereas previous claims in the present application recited a workability improver, independent claim 31 recites a means for improving moldability and mold-releasability of the cylindrical molded bodies. In the present application as originally filed, the term "workability improver" is defined as "a material that improves moldability, mold-releasability, cutting/grinding workability and grinding accuracy of the molded body". This definition is provided at least on page 20, beginning on line 6.

During the course of prosecution of the present application, the issue of the definition of "workability improver" has been the subject of considerable discussion. This derives at least in part from the unfortunate coincidence between the term as it is used in this application and the same term as it is used with a significantly different meaning in the field of cement chemistry. As discussed in detail beginning on page 7 of the amendment filed June 9, 2003 with reference to the textbook excerpt included with such amendment, the term "workability" is

used in the field of cement chemistry to mean the degree of difficulty with which concrete is cast, and is used to indicate concrete material-separation resistance, flow ability, and viscosity. As such, the recited workability improver has been interpreted to read on materials described in various applied references that do not fulfill the function intended in the present application.

In the current set of rejections, the ASAUMI et al. and RIRSCH et al. references have each been construed as teaching or suggesting a workability improver. In the RIRSCH et al. reference, it is the polymer lattice described therein that is construed as a workability improver. The RIRSCH et al. reference, as indicated beginning on line 55 of column 3, offers polymer lattices only for their ability to impart greater plasticity and workability to the water and hydraulics mixture. The "workability" referred to therein is the reduction in the water/cement ratio described on line 58.

In the case of the ASAUMI et al. patent, it is the described inorganic filler considered to be a workability improver. The ASAUMI et al. reference credits the inorganic filler with improving surface smoothness, abrasion resistance, and cutting processability.

As discussed during the personal interview, the characteristics used to define the term "workability improver" in

the present application include moldability and mold-releasability. Neither characteristic is attributed by the applied references, or any other known prior art, to either the inorganic filler of ASAUMI et al. or the polymer lattice of RIRSCH et al. Accordingly, new independent claim 31 does not recite a workability improver, but instead recites means for improving moldability and mold-releasability of the cylindrical molded bodies, which characteristics are attributed to the workability improver of the present invention. As these characteristics cannot be attributed to the polymer lattice of RIRSCH et al., the inorganic filler of ASAUMI et al., or any other ingredient described by either of these references, applicants respectfully suggest that the prior art fails to disclose, teach, or suggest the method of independent claim 31.

In addition to the new independent claim, claim 33 depends from claim 31 and further describes the means for improving moldability and mold-releasability by way of a Markush group. New claims 32 and 34 depend from claims 31 and 33, respectively, and each further recites that the means for improving moldability and mold-releasability is also a means for improving cutting/grinding workability and grinding accuracy of the molded bodies.

New claim 35 depends from claim 3 and recites additional features of the invention.

In light of the amendments described above and the arguments offered in support thereof, applicants believe that the present application is in condition for allowance and an early indication of the same is respectfully requested.

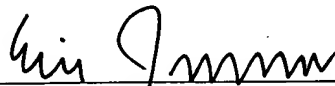
In the event that there are any questions relating to this amendment or to the application in general, it would be appreciated if the Examiner would telephone the undersigned attorney concerning such questions so that the prosecution of this application may be expedited.

Please charge the fee of \$172 for the two extra independent claims added herewith to Deposit Account No. 25-0120.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17.

Respectfully submitted,

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